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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/714,581	11/14/2003	Mustafa Kesal	MS1-1663US	1687

22801 7590 03/08/2007

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EXAMINER	
CHU, RANDOLPH I	
ART UNIT	PAPER NUMBER
2624	

SHORTENED STATUTORY PERIOD OF RESPONSE	NOTIFICATION DATE	DELIVERY MODE
3 MONTHS	03/08/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 3 MONTHS from 03/08/2007.

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lhptoms@leehayes.com

Office Action Summary	Application No.	Applicant(s)	
	10/714,581	KESAL ET AL.	
	Examiner	Art Unit	
	Randolph Chu	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 November 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-35* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-35* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claim 8-10, 20, 21 and 23-25 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claims 8, 21, 23 recite the limitation calculating "an n^{th} order statistic between a property of corresponding pixels in the original digital image and the scanned image" which was not described in the specification. In pages13-14 of instant application disclose variance between a property of corresponding pixels in the original digital image and the scanned image, but it does not disclose an n^{th} order statistic. One in the ordinary skilled in the art would not been unduly burdened to make or use the claimed invention.

Claim 20 recites the limitation compute "a histogram representing differences in a property of the original digital image and the scanned image" which was not described in the specification. In page 16 of instant application disclose differences of the original digital image and the scanned image, but it does not disclose that it is done by histogram. One in the ordinary skilled in the art would not been unduly burdened to make or use the claimed invention.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1 - 17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "the scanned image" in 2nd line. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1, 2, 7, and 14-19 are rejected under 35 U.S.C. 102(e) as being anticipated by US 7,136,191 to Kaltenbach et al.

With respect to claim 1, Kaltenbach et al. teaches, determining a correlation value between the scanned image (Fig. 3, 202) and an original digital image (Fig. 3, 200), wherein the scanned image is included in a digital file (Fig 3, 208); and generating a signal indicating whether the correlation value exceeds a threshold (Fig 3, 216).

With respect to claim 2, Kaltenbach et al. teaches, determining a correlation value between the scanned image and an original digital image comprises performing a pixel-by-pixel comparison of a property of the original digital image and the scanned image image (col. 7 lines 10-36).

With respect to claim 7, Kaltenbach et al. teaches, generating a signal if the correlation value exceeds a threshold comprises comparing a computed correlation value to a predetermined threshold (Fig 3, 216).

With respect to claim 14, Kaltenbach et al. teaches, a calibration process to generate a calibration correlation value to compensate for an error introduced by a scanning process implemented to produce the scanned image (Fig. 3, 216 and 218)

With respect to claim 15, Kaltenbach et al. teaches, calibration process comprises: printing a copy of the original digital image (Fig. 1, 11); scanning the printed copy of the original digital image (Fig. 1, 18); calculating a calibration correlation value between the original digital image and the scanned copy of the original digital image (Fig. 1, 18).

With respect to claim 16, Kaltenbach et al. teaches, comprising subtracting the calibration correlation value from the correlation value between the scanned image and an original digital image (col. 6 line 59 – col. 7 line 9).

With respect to claim 17 please refer to rejection for claim 1.

With respect to claim 18, Kaltenbach et al. teaches, comparing properties of an original digital image to properties of a scanned image (Fig. 3, 202) of the original digital image(Fig. 3, 200) (Fig 3, 208); and generate a signal if a correlation value between properties of the original digital image and properties of the scanned image exceeds a threshold(Fig 3, 216).

With respect to claim 19, Kaltenbach et al. teaches, comparing properties of an original digital image to properties of a scanned image of the original digital image comprise instructions that, when executed, direct a computer to perform a pixel-by-pixel comparison of a property of the original digital image and the scanned image (col. 7 lines 10-36).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claim 3 is rejected under 35 USC 103(a) as being unpatentable over Kaltenbach et al. (US 7,136,191) in view of Chao et al. (US 2003/0215157).

Kaltenbach et al. teaches all the limitations of claim 1 as applied above from which claim 3 respectively depend.

Kaltenbach et al. does not teach expressly that computing a cross-product of the original digital image the scanned image.

Chao et al. teaches computing a cross-product of the original digital image the scanned image (para. [0024] and [0032]).

At the time of the invention it would have been obvious to a person of ordinary skill in the art to determine correlation value using cross product of images in the method of Kaltenbach et al.

The suggestion/motivation for doing so would have been that it can be used to measure of similarity of two signals.

Therefore, it would have been obvious to combine Chao et al. with Kaltenbach et al. to obtain the invention as specified in claim 3.

9. Claim 4 is rejected under 35 USC 103(a) as being unpatentable over Kaltenbach et al. (US 7,136,191) in view of Glukhovsky et al. (US 2005/0281446).

Kaltenbach et al. teaches all the limitations of claim 1 as applied above from which claim 4 respectively depend.

Kaltenbach et al. does not teach expressly that calculating the variance between a property of corresponding pixels in the original digital image and the scanned image.

Glukhovsky et al. teaches calculating the variance between a property of pair of images (abstract).

At the time of the invention it would have been obvious to a person of ordinary skill in the art to determine correlation value using variance of images in the method of Kaltenbach et al.

The suggestion/motivation for doing so would have been that correlation between pair of image can be measure by statistical dispersion between images.

Therefore, it would have been obvious to combine Glukhovsky et al. with Kaltenbach et al. to obtain the invention as specified in claim 4.

10. Claim 5 is rejected under 35 USC 103(a) as being unpatentable over Kaltenbach et al. (US 7,136,191) in view of Glukhovsky et al. (US 2005/0281446) and in further view of Cooper et al. (US 5,920,842).

Kaltenbach et al. in view of Glukhovsky et al. teaches all the limitations of claim 4 as applied above from which claim 5 respectively depend.

Kaltenbach et al. in view of Glukhovsky et al. does not teach expressly that calculating a higher-order difference between a property of corresponding pixels in the original digital image and the scanned image.

Cooper et al. teaches calculating the variance between a property of pair of images (abstract).

At the time of the invention it would have been obvious to a person of ordinary skill in the art to determine correlation value using higher-order difference of images in the method of Kaltenbach et al.

The suggestion/motivation for doing so would have been that higher-order difference could be used to or adapted to improve the signal comparison.

Therefore, it would have been obvious to combine Cooper et al. with Glukhovsky et al. and Kaltenbach et al. to obtain the invention as specified in claim 5.

11. Claims 6 and 11, 12, 13, 22, 26, 27 and 28 are rejected under 35 USC 103(a) as being unpatentable over Kaltenbach et al. (US 7,136,191) in view of Cordery (US 2004/0125413).

With respect to claim 6, Kaltenbach et al. teaches all the limitations of claim 1 as applied above from which claim 6 respectively depend.

Kaltenbach et al. does not teach expressly that computing the sum of the pixel-by-pixel multiplication of a property of corresponding pixels in the original digital image and in the scanned image.

Cordery teaches computing the sum of the pixel-by-pixel multiplication (weighted average) of a property of corresponding pixels in the images (para. [0025]).

At the time of the invention it would have been obvious to a person of ordinary skill in the art to determine correlation value using sum of the pixel-by-pixel multiplication of images in the method of Kaltenbach et al.

The suggestion/motivation for doing so would have been that Its advantage is that it has less computations and is amenable.

Therefore, it would have been obvious to combine Cordery with Kaltenbach et al. to obtain the invention as specified in claim 6.

With respect to claim 11, Cordery teaches computing correlation value to a predetermined threshold comprises comparing the sum of the pixel-by-pixel multiplication (weighted average) of a property of corresponding pixels in images (para. [0025]).

With respect to claim 12, Kaltenbach et al. teaches wherein the property comprises a grayscale value of a pixel (col. 7 lines 56-67).

With respect to claim 13, Kaltenbach et al. teaches property comprises a value indicating a color of a pixel (col. 7 lines 56-67).

With respect to claim 22, please refer to rejection for claim 6.

With respect to claim 26, please refer to rejection for claim 11.

With respect to claim 27, please refer to rejection for claim 12.

With respect to claim 28, please refer to rejection for claim 13.

12. Claim 29 is rejected under 35 USC 103(a) as being unpatentable over Kaltenbach et al. (US 7,136,191) in view of Uchino (US 2004/0174433).

Kaltenbach et al. teaches a correlation module that determines a correlation value between the first image file and the second image file (Fig 3, 208), and generates a signal indicating whether the correlation value exceeds a threshold (Fig 3, 216).

Kaltenbach et al. does not teach expressly that a scaling module that scales at least one of a first image file and a second image file such that the files are of the same dimensions.

Uchino teaches scales at least one of a first image file and a second image file such that the files are of the same dimensions (para. [0089]).

At the time of the invention it would have been obvious to a person of ordinary skill in the art to scale images to same dimensions in the method of Kaltenbach et al.

The suggestion/motivation for doing so would have been that Comparison of images can be easier when images are in same dimension.

Therefore, it would have been obvious to combine Uchino with Kaltenbach et al. to obtain the invention as specified in claim 29.

13. Claims 30, 34 and 35 are rejected under 35 USC 103(a) as being unpatentable over Kaltenbach et al. (US 7,136,191) in view of Uchino (US 2004/0174433) and in further view of Tanaka (US 4,853,778).

With respect to claim 30, Kaltenbach et al. in view of Uchino teaches all the limitations of claim 29 as applied above from which claim 30 respectively depend.

Kaltenbach et al. in view of Uchino does not teach expressly that dividing an image file into a plurality of blocks, wherein each block includes a plurality of parameter values; and compute an average of the parameter values in the plurality of blocks.

Tanaka teaches dividing an image file into a plurality of blocks, wherein each block includes a plurality of parameter values; and compute an average of the parameter values in the plurality of blocks (col. 1 lines 39-50).

At the time of the invention it would have been obvious to a person of ordinary skill in the art to divide an image file into a plurality of blocks in the method of Kaltenbach et al.

The suggestion/motivation for doing so would have been that comparison can be done in smaller block of image so that load of processor/memory can be reduced.

Therefore, it would have been obvious to combine Tanaka with Uchino and Kaltenbach et al. to obtain the invention as specified in claim 30.

With respect to claim 34, Kaltenbach et al. teaches compute a calibration correlation value between images (col. 6 line 59 – col. 7 line 9).

With respect to claim 35, Kaltenbach et al. teaches to subtract the calibration correlation value from the correlation value between the first image file and the second image file (col. 6 line 59 – col. 7 line 9).

14. Claim 31 is rejected under 35 USC 103(a) as being unpatentable over Kaltenbach et al. (US 7,136,191) in view of Uchino (US 2004/0174433) and Tanaka (US 4,853,778) and in further view of Matsugu (US 6,636,635).

Kaltenbach et al. in view of Uchino and Tanaka teaches all the limitations of claim 30 as applied above from which claim 31 respectively depend.

Kaltenbach et al. in view of Uchino and Tanaka does not teach expressly that applying a threshold to the average of the parameter values in the plurality of blocks.

Matsugu applying a threshold to the average of the parameter values in the plurality of blocks (col. 59 line 64 – col. 60 line 12).

At the time of the invention it would have been obvious to a person of ordinary skill in the art to apply a threshold to the average in the method of Tanaka, Uchino and Kaltenbach et al.

The suggestion/motivation for doing so would have been that binarization threshold value may be set on the basis of statistical processing for a local region.

Therefore, it would have been obvious to combine Matsugu with Tanaka, Uchino and Kaltenbach et al. to obtain the invention as specified in claim 32.

15. Claim 32 is rejected under 35 USC 103(a) as being unpatentable over Kaltenbach et al. (US 7,136,191) in view of Uchino (US 2004/0174433) and Tanaka (US 4,853,778) and in further view of Glukhovsky et al. (US 2005/0281446).

Kaltenbach et al. in view of Uchino and Tanaka teaches all the limitations of claim 30 as applied above from which claim 32 respectively depend.

Kaltenbach et al. in view of Uchino and Tanaka does not teach expressly that calculating the variance between a property of corresponding pixels in the original digital image and the scanned image.

Glukhovsky et al. teaches calculating the variance between a property of pair of images (abstract).

At the time of the invention it would have been obvious to a person of ordinary skill in the art to determine correlation value using variance of images in the method of Tanaka, Uchino and Kaltenbach et al.

The suggestion/motivation for doing so would have been that correlation between pair of image can be measure by statistical dispersion between images.

Therefore, it would have been obvious to combine Glukhovsky et al. with Tanaka, Uchino and Kaltenbach et al. to obtain the invention as specified in claim 32.

16. Claim 33 is rejected under 35 USC 103(a) as being unpatentable over Kaltenbach et al. (US 7,136,191) in view of Uchino (US 2004/0174433) and Tanaka (US 4,853,778) and in further view of Chao et al. (US 2003/0215157).

With respect to claim 33, Kaltenbach et al. in view of Uchino teaches all the limitations of claim 30 as applied above from which claim 33 respectively depend.

Kaltenbach et al. in view of Uchino and Tanaka does not teach expressly that computing a cross-product of the original digital image the scanned image.

Chao et al. teaches computing a cross-product of the original digital image the scanned image (para. [0024] and [0032]).

At the time of the invention it would have been obvious to a person of ordinary skill in the art to determine correlation value using cross product of images in the method of Tanaka, Uchino and Kaltenbach et al.

The suggestion/motivation for doing so would have been that it can be used to measure of similarity of two signals.

Therefore, it would have been obvious to combine Chao et al. with Tanaka, Uchino and Kaltenbach et al. to obtain the invention as specified in claim 33.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Randolph Chu whose telephone number is 571-270-1145. The examiner can normally be reached on Monday to Thursday from 7:30 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Mancuso can be reached on 571-272-7695. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RIC/

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SUPERVISORY PATENT EXAMINER